

PRACTICE TEST 4 – CHAPTERS 9, 10

Beginning and Intermediate Algebra by Messersmith and Feldman, 4th edition

Solve the absolute value equations.

1. $|2x - 6| = -5$
2. $|5 - 8y| = 1$
3. $|14z - 7| - 17 = -17$
4. $|6b + 3| - 8 = 3$
5. $|3m + 2| = |6m - 20|$

Solve the inequalities. Graph the solution sets and write the answers in interval notation.

6. $|2c + 6| + 2 \leq 14$
7. $|4b + 8| - 18 > 2$
8. $|3x - 6| + 2 < 20$
9. $|2x + 5| - 3 \geq 8$

Graph the inequality.

10. $y < -\frac{1}{2}x - 7$
11. $3x - 4y \leq 11$

Graph each compound inequality.

12. $y \leq \frac{3}{4}x + 2$ and $y \geq 2$
13. $x < -3$ and $y > \frac{3}{4}x + 3$

Find the following roots, if possible.

14. $-\sqrt[3]{-125}$
15. $\sqrt[4]{\frac{16}{81}}$
16. $\sqrt{1 - 4}$

Write in radical form and evaluate.

17. $121^{\frac{1}{2}}$
18. $\left(\frac{4}{25}\right)^{\frac{1}{2}}$
19. $(-216)^{\frac{1}{3}}$

Simplify completely. Assume all variables represent positive real numbers.

20. $\sqrt{72x^{16}}$

21. $\sqrt{75x^{17}y^9}$

22. $\sqrt[3]{32t^{11}u^7}$

23. $\sqrt[3]{\frac{27a^{17}}{b^{12}}}$

24. $\sqrt[3]{3x^{11}} \cdot \sqrt[3]{9x^6}$

Perform the operation and simplify.

25. $\sqrt{147} - 3\sqrt{12} + 8\sqrt{108}$

26. $(\sqrt{5p} + 5\sqrt{q})(4\sqrt{5p} - \sqrt{q})$

Rationalize the denominators of the expressions.

27. $\frac{\sqrt{8}}{\sqrt{45}}$

28. $\frac{\sqrt{6}}{\sqrt{m}}$

29. $\sqrt{\frac{36x^3}{5y}}$

30. $\frac{4}{7 - \sqrt{2}}$

Practice Test 4 Chapters 3, 4, 5, 8 Answers

1. No solution

$$2. y = \left\{ \frac{1}{2}, \frac{3}{4} \right\}$$

$$3. z = \left\{ \frac{1}{2} \right\}$$

$$4. b = \left\{ -\frac{7}{3}, \frac{4}{3} \right\}$$

$$5. m = \left\{ 2, \frac{22}{3} \right\}$$

6. $[-9, 3]$



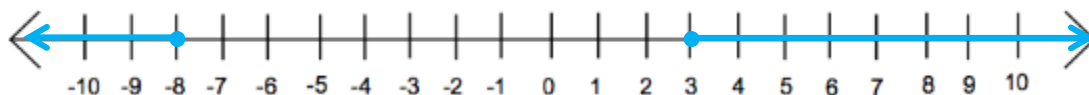
7. $(-\infty, -7) \cup (3, \infty)$



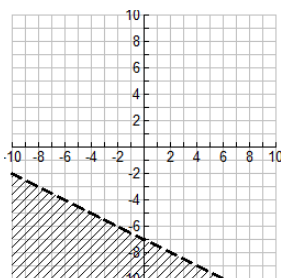
8. $(-4, 8)$



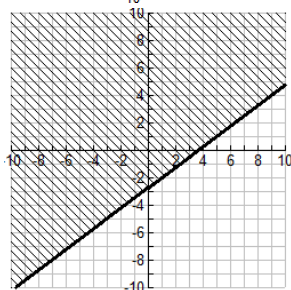
9. $(-\infty, -8] \cup [3, \infty)$

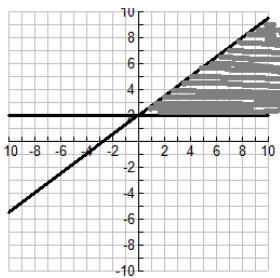


10.

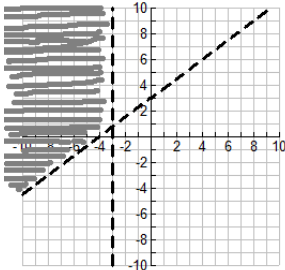


11.





12.



13.

14. 5

15. $\frac{2}{3}$

16. not real

17. 11

18. $\frac{2}{5}$

19. -6

20. $6x^8\sqrt{2}$

21. $5x^8y^4\sqrt{3xy}$

22. $2t^3u^2\sqrt[3]{4t^2u}$

23. $\frac{3a^5\sqrt[3]{a^2}}{b^4}$

24. $3x^5\sqrt[3]{x^2}$

25. $49\sqrt{3}$

26. $20p - 5q + 19\sqrt{5pq}$

27. $\frac{2\sqrt{10}}{15}$

28. $\frac{\sqrt{6m}}{m}$

29. $\frac{6x\sqrt{5xy}}{5y}$

30. $\frac{28 + 4\sqrt{2}}{47}$